

REMARKS

Applicants thank the Examiner for the thorough review of the application.

Claims 3, 9, 13, 24, and 28 have been amended. Support for the amendments can be found throughout the specification. No new matter has been added by way the amendments.

At page 2, paragraph 1 of the Office Action, the Examiner affirms entry of the cancellation of claims 1, 4-5 and 14-20; the amendments to claims 2-3, 6 and 12; and the addition of claims 21-28 as requested in Applicant's Paper No. 5, filed September 26, 2002.

At page 2, paragraph 2 of the Office Action, the Examiner acknowledges the election of SEQ ID Nos: 1 and 2 of Group I, the elected claims, and then states that "*Claims 1, 4-5, 6-12 and 21-28 are pending.*" [Emphasis added] However, claims 1, 4, and 5 were cancelled in Applicant's Paper No. 5 and the cancellation entered in the instant Office Action. The pending claims for the instant Office Action should be claims 2, 3, 6-13, and 21-28. Pending claim 2 is the main independent claim.

Applicants note that there were no objections or rejections of pending claim 2 in the instant Office Action and assume claim 2 stands allowed. Clarification of this point is respectfully requested.

As requested by the Examiner, the title and abstract have been amended to be more indicative of the invention to which the claims are directed.

Section headings and paragraph numbers used below correspond to those of the pending Office Action.

Claims Objections

5. Claims 3, 9, and 24 were objected to because they start with an improper article. Accordingly, claims 3, 9, and 24 have been amended to start with a proper article. Therefore, Applicants respectfully request that the objection be withdrawn.

Claim Rejections – 35 U.S.C. § 112

7. Claims 1, 4-5, 6-12 and 21-28 were rejected under 35 U.S.C. § 112, first paragraph, for an alleged lack of enablement. The Examiner asserts that although being enabling for a nucleic acid encoding SEQ ID NO: 2, the specification does not reasonably provide enablement for a method of increasing SAR in plants by transformation with a nucleic acid encoding SEQ ID NO: 2 and plants so transformed.

Entry of the cancellation of claims 1, 4, and 5 as requested in Applicants' Paper No. 5, filed September 26, 2002, was affirmed in the instant Office Action. Therefore, the rejection to claims 1, 4, and 5 under 35 U.S.C. § 112, first paragraph, is moot. The rejection of claims 6-12 and 21-28 is respectfully traversed.

The Examiner states that “[T]he claims are broadly drawn to a method of increasing SAR in plants by transformation with a nucleic acid encoding SEQ ID NO: 2 and plants so transformed.” Applicants respectfully disagree. The instant invention is drawn to a nucleic acid molecule that encodes SEQ ID NO: 2 (claim 2; which is the pending main claim and does not stand rejected), to a specific embodiment of a nucleic acid molecule that encodes SEQ ID NO: 2 (claim 3; which does not stand rejected), to chimeric genes comprising the nucleic acid molecule of claim 2 (claims 6 and 21), to vectors comprising the chimeric gene (claims 7 and 22), to transgenic host cells (claims 8, 9, 23, and 24) and transgenic plants and transgenic seeds (claims 10-12, and 25-27) comprising a nucleic acid molecule that encodes SEQ ID NO: 2, and to methods of increasing SAR gene expression by expressing the nucleic acid molecule of the invention in a plant (claims 13 and 28). Applicants note that claim 13 has not been rejected under 37 C.F.R. § 112, first paragraph. All of the dependent claims depend directly or indirectly from claim 2 which recites a nucleic acid molecule encoding SEQ ID NO: 2 which the Examiner has agreed is enabled by the specification.

Applicants submit that the instant application clearly has an enabling disclosure for the skilled person for the chimeric genes of claims 6 and 21 (see, for example pages 20-22, and 29-38); for the vectors of claims 7 and 22 (see, for example pages 20-22, and 29-38), for the transgenic host cells of claims 8, 9, 23 and 24 (see

Examples 4 and 9); for the transgenic plants and seeds of claims 10-12, and 25-27 (see Examples 4 and 9); and for the method of increasing SAR gene expression of claim 28 (see Example 4). Further, Applicants assert that if method claim 13 is enabled, by virtue of not being rejected under 112, first, then method claim 28 would also be enabled.

The Examiner asserts that the invention is drawn to a method of producing enhanced disease resistance by increasing SAR in plants (Page 3, lines 3-4 and lines 18-19; Page 4, lines 6-7 of the Office Action). Applicants respectfully disagree. Of the 18 pending claims only claim 13 and 28 are drawn to methods. Claim 13 does not stand rejected under 112, first. Claim 28 is drawn to a method of increasing SAR gene expression in a plant. The specification discloses that the NI16 gene encodes a protein involved in the regulation of SAR gene expression (page 5, line 3), and that transgenic expression of the NI16 gene results in a corollary elevation of SAR gene expression, such as the pathogenesis-related protein PR-1 (page 19, lines 29-30; Example 4). Thus, applicants assert that the specification provides teaching to one of ordinary skill in the art how to increase SAR gene expression in a plant.

The Examiner has requested clarification as to whether the examples as written in present tense are prophetic or were actually carried out. Particularly, the Examiner states that all examples for which there is no outside support (e.g., a Table showing data or a SEQ ID NO) is alleged to be prophetic, rather than an experiment that was actually carried out. Applicants submit that the only examples relevant to the instant invention that do not have a data table or SEQ ID NO: as “outside support” is Example 2, portions of Example 4, and Examples 7-10. In general, the level of detail of results provided in the examples clearly shows which are prophetic and which were actually carried out. For instance, Example 2 provides experiments conducted on induction of NI16 mRNA in plants. The level of detail provided for the results, particularly at page 24, lines 10-14, which reads, *“NI16 RNA is induced 5-10 fold within 15 minutes of SA or BTH induction and reaches a peak of approximately 50 fold induction within 2 hours of SA treatment and 25 fold induction with BTH treatment. The transcript remains highly induced up to 24 hours after SA and at least 48 hours after BTH treatment.”*; at lines 22-27; and page 25, lines 3-6, clearly demonstrates that the experiments were actually carried out in that such exact numbers would not be used if the example was prophetic. Applicants submit that one

skilled in the art would recognize that this level of detail would not be used in a prophetic statement. Clear conclusions are drawn from Example 2, that being, "*It can be concluded from these experiments that salicylic acid and a functional NI11 protein are necessary for induction of NI16 in response to pathogens.*"", again demonstrating that the experiments were actually carried out and not prophetic.

The only portion of Example 4 not associated with a Table or SEQ ID NO: is the section detailing the results of the analysis of transgenic nahG, nim1-1, and nim1-4 plants overexpressing NI16 (page 26, lines 17-24). Applicants submit that it is clear from the detailed results provided that this experiment was actually carried out.

Examples 7-10 provide a general prophetic teaching of methods of producing transgenic plants comprising a chimeric gene of the instant invention.

In view of the above comments, it is respectfully requested that the rejection of claims 6-12 and 21-28 under 35 U.S.C. § 112, first paragraph be withdrawn.

9. Claims 12, 13, 27, and 28 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly not pointing out and distinctly claiming the subject matter which the applicants regard as their invention.

It is not clear to the Examiner if the transgenic seed in claims 12 and 27 comprise the chimeric gene of the instant invention or whether they are transformed by some other nucleic acid. The Examiner asserts, "*half the seed from a transgenic plant will not contain the nucleic acid with which the plant was transformed.*" The Applicants agree with the Examiner that half the seed from a transgenic plant may not contain the nucleic acid with which the plant was transformed. However, claims 12 and 27 are not drawn to all seed of the transgenic plant but to the transgenic seed of the transgenic plant. Transgenic is defined in the specification at, for example, page 18, lines 3-9, as a host organism such as a plant into which a heterologous nucleic acid molecule has been introduced. The term transgenic encompasses the transgenic progeny of a transgenic plant. In the instant application, claim 12 depends from claim 10, which depends from claim 9, which depends from claim 8, which depends from claim 6, which depends from claim 2. In like manner, claim 27 depends from claim 25, which depends from claim 24, which depends from claim 23, which depends from claim 21, which depends from claim 3, which depends from claim 2. Claim 2 is drawn to a nucleic acid molecule that encodes SEQ ID NO: 2. Therefore, Applicants submit

that in using the term "transgenic seed" in claim 12 and claim 27 it is clear that the transgenic seed will comprise the nucleic acid molecule of claim 2.

Claims 13 and 28 are held indefinite because the Examiner asserts they lack agreement between the preamble of the methods and the positive method steps. The Examiner also asserts that claim 13 and claim 28 omit essential steps in that the steps involved in getting the chimeric gene into the plants has been omitted. Applicants have amended claims 13 and 28 so that there is agreement between the preamble and the positive method steps. Also, amended claims 13 and 28 recite the step of introducing the chimeric gene of the invention into a plant cell.

In view of the above comments and amendments, it is respectfully requested that the rejection of claims 12, 13, 27, and 28 under 35 U.S.C. § 112, second paragraph be withdrawn.

Conclusion

In view of the above comments and amendments, Applicants submit that this application is now in condition for allowance. Early notice to this effect is solicited. If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned agent.

Respectfully submitted,



Gregory W. Warren
Agent for Applicants
Registration No. 48,385

Syngenta Biotechnology, Inc.
P. O. Box 12257
Research Triangle Park, NC 27709-2257
Telephone: 919-541-8646
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